

C3
12. (Amended) The process of claim 11, wherein the DNA which encodes a desert hedgehog protein is expressed through culturing of a host cell transformed by introduction of said DNA.

C4
14 14. (Amended) The process of claim 11, wherein the generated hedgehog protein is collected through immunoaffinity chromatography using a monoclonal antibody that recognizes a desert hedgehog protein of human origin.

Add new claim 17 as follows:

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C5 17. (New) The DNA of claim 1, which has a DNA identity of at least 80% homology to either of DNAs of mouse desert hedgehog, mouse and human Indian hedgehog, and mouse, chicken, human and zebrafish sonic hedgehog proteins, and which is not identical to the DNAs of said mouse, chicken, human and zebrafish sonic hedgehog proteins.

REMARKS

The Official Action of November 9, 2001, Paper No. 8, and the prior art relied upon therein have been carefully reviewed. The claims in the application are now claims 1-7, 11-14 and 17, and these claims define patentable subject matter warranting their allowance. Applicants accordingly respectfully request favorable reconsideration and allowance.

Acknowledgement by the PTO of the receipt of applicants' papers filed under Section 119 is noted.

The restriction requirement has been repeated and made final. Accordingly, applicants have deleted the non-elected claims without prejudice.

The specification has been criticized with regard to a heading at page 4. This criticism is respectfully traversed, as is the requirement to replace it with a different heading differing by one word.

MPEP 608.01(f) requires no special wording. For example, see MPEP 608.01(a) which suggests different wording from what the Office Action suggests. Indeed, there is no requirement for any headings at all. There is no authority for the requirement, and applicants request that it be withdrawn.

As regards the printing error on page 4, fourth line of the sixth paragraph, applicants request that the examiner make this correction by "red-inking" upon allowance of the present application.

Claims 5 and 14 have been objected to because of a typographical error in claim 5 and the use of a capitalized

letter in claim 14. Appropriate corrections have been made above consistent with the examiner's helpful suggestions.

Claims 1-5 have been rejected under Section 101 as being non-statutory. The examiner's helpful suggestion is appreciated and has been adopted. Of course, it was never applicants' intention to call for non-statutory subject matter.

Claims 1-11, 12, 14, and also claims 2-7 and 13, have been rejected under the second paragraph of Section 112. This rejection is respectfully traversed.

Applicants believe and submit that the claims as previously drafted, considered in light of the specification as per the law, would not be confusing to the person skilled in the art, and therefore the claims in their previous form are fully in accordance with Section 112. At worst, the criticized claims (or some of them) in their original forms might only be considered objectionable as to form.

Regardless, in deference to the examiner's views and to avoid or minimize needless argument, a number of cosmetic amendments have been introduced. Such amendments are of a formal nature only, i.e. made to place the claims either in better form consistent with U.S. practice or in better form according to what the examiner perceives as U.S. practice.

These amendments are not "narrowing" amendments because the scope of the claims has not been reduced. No limitations have been added in these regards and none are intended, whereby the meanings of the claims remain unchanged.

Applicants respectfully request withdrawal of the rejection under the second paragraph of Section 112.

Claims 1-7 and 11-14 have been rejected under the first paragraph of Section 112. This rejection is respectfully traversed.

The rejection, insofar as it is understood, does not apply to all of claims 1-7 and 11-14, but only claims 2-4, the latter of which have been appropriately amended to obviate this rejection.

Insofar as the rejection might apply to other claims, applicants submit that such claims are fully commensurate with applicants' invention, and that those skilled in the art would be able to practice applicants' invention as taught by applicants' specification.

Withdrawal of the rejection is respectfully requested.

Claims 1-5 have been rejected under Section 102 as anticipated by Drummond et al, citation BC, hereinafter "Drummond". This rejection is respectfully traversed.

Applicants do not see that Drummond discloses an isolated DNA which encodes a desert hedgehog protein of human origin as called for in claim 1, let alone the features added in the dependent portions of claims 2-5.

Applicants respectfully request withdrawal of this rejection.

Applicants respectfully note that claims 6, 7, 13 and 14 have not been rejected on the basis of any prior art, and applicants accordingly understand that these claims are deemed by the PTO to define novel and unobvious subject matter under Sections 102 and 103.

The prior art documents made of record and not relied upon have been noted, along with the implication that such documents are deemed by the PTO as being insufficiently pertinent to warrant their application against any of applicants' claims.

New claim 17 has been added above. No prior art of which applicants are aware anticipates or makes obvious what is recited in new claim 17.

Applicants request favorable reconsideration and allowance.

Respectfully submitted,

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Version with Markings to Show Changes Made

1. (Amended) An isolated DNA which encodes a desert hedgehog protein of human origin.
2. (Amended) The DNA of claim 1, which contains a ~~part or the whole of either~~ the nucleotide sequence of SEQ ID NO:4 or its complementary nucleotide sequence.
3. (Amended) The DNA of claim 1, which contains a ~~part or the whole of either~~ the nucleotide sequence of SEQ ID NO:5 or its complementary nucleotide sequence.
4. (Amended) The DNA of claim 1, which contains a ~~part or the whole of either~~ the nucleotide sequence of SEQ ID NO:6 or its complementary nucleotide sequence.
5. (Amended) The DNA of claim 1, wherein, based on the degeneracy of genetic codes, one or ~~one or more~~ nucleotides are replaced with different nucleotides while conserving the encoding amino acid sequence.
11. (Amended) A process for producing a hedgehog protein of human origin, which comprises ~~allowing expression of expressing~~ a DNA that encodes a desert hedgehog protein of human origin to generate said desert hedgehog protein, and collecting the generated desert hedgehog protein.

12. (Amended) The process of claim 11, wherein the DNA which encodes a desert hedgehog protein is expressed through culturing of a ~~transformant introduced with a DNA that encodes the hedgehog protein~~ host cell transformed by introduction of said DNA.

14. (Amended) The process of claim 11, wherein the generated hedgehog protein is collected through immunoaffinity chromatography using a monoclonal antibody that recognizes a ~~Desert~~ desert hedgehog protein of human origin.